

H O L S T

A modern residential courtyard at dusk. The scene features a pergola structure with a fire pit in the center. A person is sitting in a chair to the left, and another person is walking in the foreground on the right. The background shows modern houses with large windows and a stone wall. The lighting is soft, suggesting twilight.

# Net Zero Emerging Leader Internship

Holst Architecture | Energy Trust of Oregon

# Holst Architecture



Medium Sized Firm  
40 Employees



Architecture 2030 Challenge  
2017: 26 Projects  
2018: 33 Projects

# Agenda



# Research



# Why?



Built environment is  
an energy intensive  
industry



Design Energy (pEUI)  
Site Energy (EUI)



Bake energy data  
into the design  
process

# Best Practices



## Tools for Architecture

Sefaira

Autodesk Insight 360

EnergyPlus



## Energy Data

Post-occupancy

High Performance Buildings

Smart Grids

# Holst Method

## Challenges

- Not part of a process
- Requires a lot of work at the end of the reporting year



## Goals

- Streamline reporting
- Incorporate into the design process
- Create a feedback loop



# Reporting



# Project Team Reporting



REPORTING  
SPREADSHEET



PROJECT TEAM  
MEETINGS



DATA CLEANING

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REQUIRED						
Project Name	Project ID	Project Category	Construction Type	Project Phase	Country	St
text	numeric	selection option	selection option	selection option	selection option	te
<i>Example Project</i>	<i>11-025.00</i>	<i>Non-Residential</i>	<i>New Construction</i>	<i>Design Development</i>	<i>United States of America</i>	<i>Or</i>
HDC-Asian Health & Service Center	15-043.00	Non-Residential	New Construction	Design Closeout Final	United States of America	Or
Jigme Singye Wangchuk Law Library(RI)	15-056.00	Non-Residential	New Construction	Construction Administration	Other-Asia	
72 Foster: SD-CA	15-086.02	Residential	New Construction	Design Closeout Final	United States of America	Or
LISAH	15-090.00	Residential	New Construction	Construction Documents	United States of America	Or
Mississippi & Fremont 2016	16-002.00	Residential	New Construction	Design Closeout Final	United States of America	Or
Overlook - West	16-024.00	Residential	New Construction	Construction Administration	United States of America	Or
Overlook - East	16-024.01	Residential	New Construction	Construction Administration	United States of America	Or
Courtyard - South Lake Union	16-030.00	Interior Only	Major Renovation of Existing Building	Construction Administration	United States of America	W
SCCC: Holst Architecture CA	17-016.08	Non-Residential	Major Renovation of Existing Building	Construction Administration	United States of America	Or

# Batch Upload



TIME SAVER



SEPARATE TEMPLATE



INTERNAL DATA

# Design Data Exchange (DDx)

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- Information challenges:
  - 3D Models
  - GMP drawings
  - Energy models
  - HVAC System information (ME)

# Data Analysis

## DDx Data Report

- Percentages towards a goal
- Overall program performance
- Assumption: already on board for sustainable buildings

## Supplement to DDx

- Make the argument for sustainable designs
- EUI relative to:
  - Design code
  - Energy model
  - Building type
  - Materials

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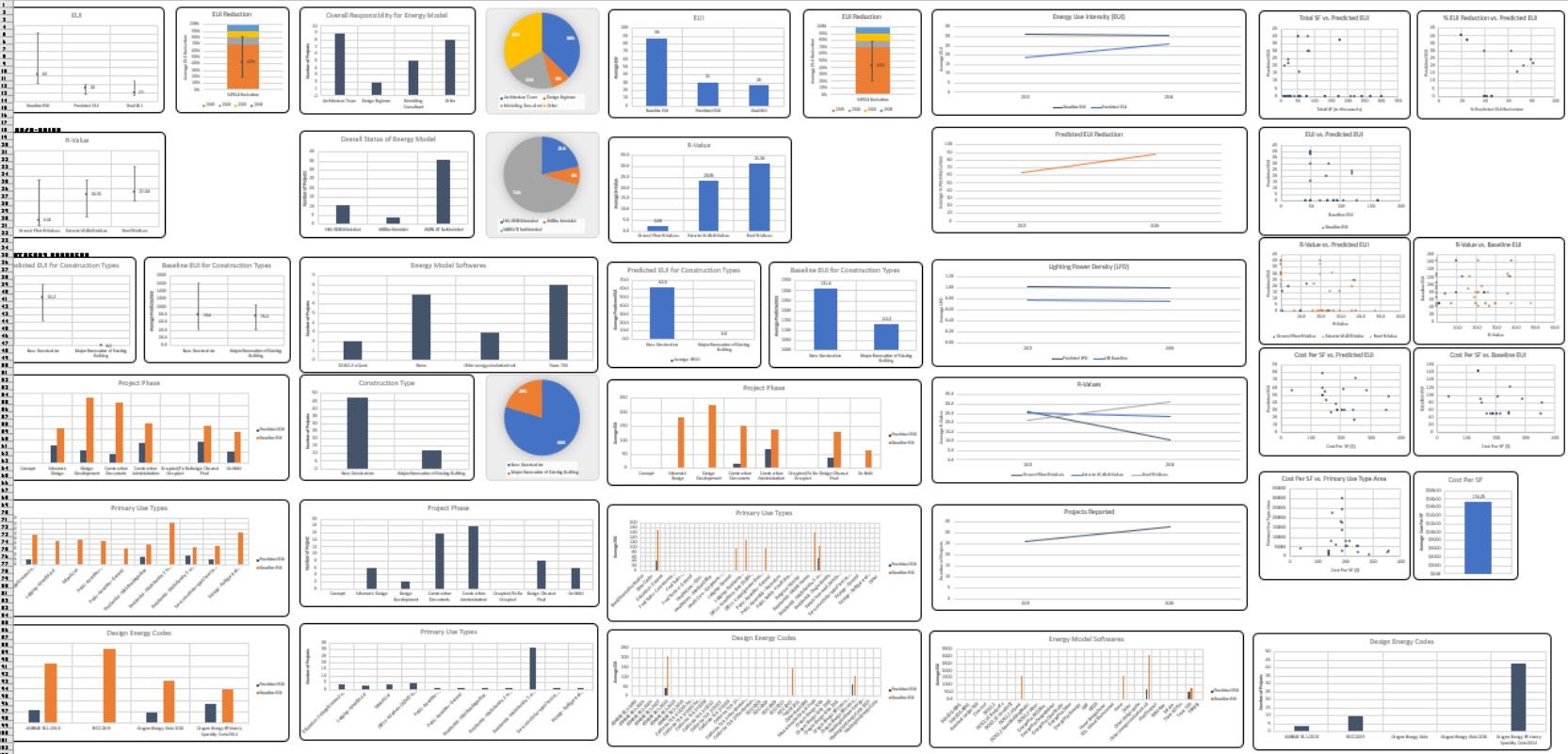
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Wrap Text Merge & Center

General

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Instructions OverallAverages YearlyAverages Trends Relationships ProjectData UseType ...

An architectural rendering of a modern building with a vibrant, multi-colored facade of red, orange, and yellow panels. The building has a mix of window sizes and a glass-enclosed ground floor. In the foreground, a paved plaza features several people: a woman sitting on a bench with a laptop, a dog lying down, a person walking, and three children in yellow shirts. The scene is set against a cloudy sky with some trees visible on the right.

# Lessons Learned



# NZEL Lunch

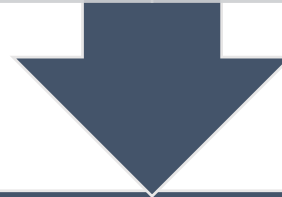
Approaches to sustainable design varies widely across the industry.

Method

Process

Tool/Software

Implementation



Energy Data

Internal vs. External

Energy Modeling

# Working at Holst

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COMMUNITY



PROJECT  
SITE VISIT



MICROBIAL  
BUILT  
ENVIRONMENT  
SPEAKER



NEW HQ  
CHARETTE



GREEN  
TEAM

# Future Challenges

## Design Energy and Site Energy

- Benchmarking
- Energy modeling

## Information collection

- Design source energy
- Design CO<sub>2</sub>e intensity
- LCA/proxy

# Next Steps



ENERGY, MATERIALS  
AND WATER



IN-HOUSE ENERGY  
MODELING



SUSTAINABLE  
DESIGN PROCESS

An architectural rendering of a modern, multi-story building with a prominent glass facade and a wooden-clad upper section. The scene is set at dusk, with a colorful sky and silhouettes of trees. People are shown walking on the sidewalk, and a car is parked on the street. The text "Thank You!" is overlaid in the center of the image.

Thank You!